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Canada's Role in Science and Technology for Development

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J. King Gordon
Editor

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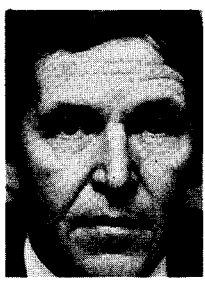
CIDA: Experience in Technical Assistance and the Transfer of Technology



William Jenkins, CIDA

I find that this morning's speakers are hard acts to follow, and I will be speaking on a different plane than they were — I won't say a lower plane — just different. I would like to concentrate on mechanisms, our experience with different delivery mechanisms. Before reviewing our experience, I would like to make a few points. One is that regardless of the definition of "transfer of technology" that you use, and there are many, it covers a broad range of activity, a broad range of endeavours. It covers the activities of Canadian exporters, consultants, academics, journalists, authors, voluntary agencies, missionaries, and, of course, the government-aid agencies Canadian International Development Agency and IDRC. The point I'm trying to make is that CIDA is merely one of many actors in this field. Another point you should remember is that when we are talking about transfer of technology under an aid umbrella we are largely talking about the transfer of "know-how," the transfer of information, knowledge, or skills that are in the public domain. We are not talking about the transfer of patentable technology. Sometimes the two get confused in the discussion of transfer of technology, which leads to misunderstanding.

CIDA-sponsored transfers are only one of the many forms of transfer; they have some unusual qualities, some positive and some negative. Let me list a few.

The prime goal of CIDA transfers is the development of the recipient. Others are motivated by the same goal. I suppose within Canada we are responsible for the largest volume of transfers, the prime motive of which is development of the recipient. If development of the recipient is unquestionably our prime goal, we should not lose sight of the fact that we are an integral part of the Canadian government; we are an integral part of foreign policy. We cannot escape this even if we wish to. In many instances we are the most substantive element in the bilateral relations between Canada and the countries we are helping. It would be unrealistic to think that we could act without sensitivity to other Canadian domestic and foreign policy interests. Therefore, pursuit of mutual interests is very much in our minds. We do not have time here to develop this theme and to explore what effect this can have on our program, but I suggest that these matters be discussed in the workshops or during the question period.

Another unusual quality of CIDA (or any government or multilateral aid agency) is that basically we are a source of funds for aid-oriented activities. We are not an executing agency; we are program administrators. We are not custodians of the skills or technology that we transfer to developing countries.

To put it bluntly, we go into the marketplace to purchase the skills or technology we wish to transfer to developing countries. We facilitate the transfer of goods, services, skills, and know-how to developing countries. To a considerable degree what we transfer is Canadian. Consequently we have to choose whether to transfer existing skills or, through our aid funds, to catalyze the development of new skills. If we choose the latter, we have to decide whether to encourage this development in Canada for subsequent transfer to developing countries or to encourage the development directly in the developing countries. This is another question I invite you to consider in the workshops because it is a problem that we are battling with at present. I would be interested in having your comments.

Another element we should keep in mind when judging CIDA's experience with technical assistance is the fact that CIDA-inspired transfers of technology are not limited to projects or programs that bear a technical assistance label. Our food, commodity, and capital assistance releases resources in the developing countries that can then be employed to create new technologies or apply existing ones. Whether or not this happens, of course, depends on the priorities of the recipient government and the constraints under which it is operating. This is an important point, and it would be worth discussing. Should we concentrate our assistance in the social sectors or in rural development, where there is more uncertainty about the appropriateness of our skills or technology? Should we concentrate on the transfer of technologies that we know are universally applicable such as those required as elements of the infrastructure, such as transmission lines or power lines?

CIDA's technical assistance has served three broad purposes: it has complemented specific development projects; it has been a means of expanding the country's general capacity for institution building; and it has provided badly needed personnel to maintain essential services, basically filling gaps.

From the 1950s until about 1967, technical assistance was concentrated on institution building and filling gaps. It was relatively unplanned and frequently a response to developing countries' requests primarily for teachers, to meet personnel shortages, and individual students' requests for training awards. The fact that it was relatively unplanned was not, in my view, an error. The emerging nations were going through a difficult period of adapting to new independence, and the fact that we were able to respond quickly to their urgent requests was useful and timely. There was, naturally, a technical assistance component in the balance of our aid effort, which focused on the transfer of capital goods and commodities. However, generally this technical assistance did not go beyond that required to design and construct a specific capital project. By the late 1960s we recognized that capital projects were not being accompanied by the satisfactory transfer of skills to maintain them effectively; consequently, around 1970, the integrated project approach was developed to overcome this weakness. This approach was designed to determine simultaneously all aspects of the project, including training, so that nationals would be better able to manage, operate, and maintain a project — be it machinery, a system, or an educational institution — long after the Canadian advisers and educators had returned home. One of the three prime development objectives of our program is the development of self-reliance, and it was through this integrated project approach that we thought we would be able to make a substantial contribution to the development of self-reliance.

What are the specific changes in program content that the evolution since 1970 in our technical assistance policies has produced?

There has been a gradual decline in the use of long-term general technical assistance as a result of the increasing integration of technical assistance with capital projects. Over time, only the advisers, teachers, students, and trainees who constituted an essential part of a project were retained. The concentration of technical assistance in integrated projects resulted in a reduction in the numbers of CIDA advisers and trainees. The relative share of this type of technical assistance as a proportion of the Official Development Assistance (ODA), also declined, from 12.7% in 1968 to 5.4% in 1978, but during that period the level of ODA was growing substantially.

Looking specifically at the student trainee programs we also see a significant change over time — mainly due to the evolution of facilities in the developing countries. The program has moved from the provision of individual academic awards at the undergraduate level toward short-term practical programs in technical and community colleges. Priority has been placed on several sectors, basically agriculture, forestry, engineering, and public administration. The use of third-country training has increased significantly, and I see this trend continuing. The provision of advisers and teachers has evolved from a concentration on individuals in positions in secondary schools to greater use of groups of advisers and teachers in integrated projects and postgraduate faculties, with more emphasis on training teachers and their counterparts. Because the volume of the technical assistance program, although not the percentage of this program in the total program, has been growing substantially, and also because the activities frequently have become more complex, we have, over the past few years, been relying more and more on the executing agents to implement our projects. Again, this is a trend that I am sure will continue, for a variety of reasons.

Some of the slack caused by the decline of general technical assistance in the bilateral program has been taken up by increases in our contributions to multilateral institutions, particularly the United Nations Development Programme, which now receives about 50% of our multilateral technical assistance funds. These contributions have increased sevenfold since 1968. Programs of nongovernmental organizations (NGOs) also play an important part in the transfer of technology. Generally the programs of such Canadian organizations — Canadian University Service Overseas (CUSO) and World University Service of Canada (WUSC), for example — have concentrated on the upgrading of skills, relatively elementary skills originally, but now more specialized and practical skills. The share of such support in our total program will certainly not diminish in the future, and it could easily increase.

What are some of the lessons we have learned from our experience and, above all, what effects are these lessons likely to have on future activities? We are now midway in examining our experience; we are reviewing all our aid policies as part of the Canadian development strategy. We have not reached any important conclusions, but I can give you some personal observations on what we did right or wrong and what changes we might introduce.

First, we may have gone too far — although this opinion is not universally accepted — in emphasizing project-related technical assistance and playing down pure technical assistance. From a Canadian perspective the integration of technical assistance into specific projects continues to represent several advantages. Here I am certainly talking as a program administrator. It allows better program control and facilitates the programing and administration of technical assistance. Results are more immediately visible than with the general human resource development form of technical assistance. In brief, technical assistance

Project-related technical assistance is easier to control financially and administratively than is human resources development assistance but may not reap as high a premium.

related to projects is easier to administer, easier to evaluate, and less risky. Given the present fiscal and public climate, the concern about financial control, and the concern about evaluation, I can assure you that it will certainly be tempting to continue our concentration on project-related technical assistance. However, I hope we can resist that temptation. We are now questioning whether the time has come, not to abandon project-oriented technical assistance, but to renew the CIDA capability for rapid and flexible responses to the needs of less developed countries in the area of human resources development. This is another question I would like to put before the panel for your consideration.

One of the other lessons we have learned is that we have a tendency to be too concerned about withdrawing from a project on time. When we start a

project we say: "Oh, this project will be self-sustaining within 5 years." At the end of 5 years we have tended to attach more importance to withdrawing on schedule than to extending the duration of our involvement when it is apparent that the project is not yet self-sustaining. We probably have a better understanding now of the difficulty of forming counterparts to whom technology and know-how can be transferred on a permanent basis. I hope that in the future we will be less concerned about getting out on time and more concerned about being sure that we have left a self-sustaining project, program, or activity behind us. This difficulty becomes more and more marked as you become involved in projects in the rural and social sectors. We now realize that talking about a 5-year rural development project is utterly unrealistic: involvement is needed for 10 or 15 years, or even longer in some cases. I think also that both CIDA and the countries with whom we are working have had a tendency to overestimate the ability of the host country to provide counterparts and to ensure that those counterparts would absorb the technology and actually stay on the spot to apply it where we had agreed it was needed. Therefore, I think we are going to have to, in the future, build a much bigger reserve of counterparts into our activities.

We probably have had a tendency to overbuild in some cases, to overdesign, so that the facilities that we provided were appropriate for Toronto but not for the location where we established them.

We have also realized that the process of selecting advisers is much more complex and demanding than we had realized. An adviser — someone capable of sharing knowledge and know-how — requires some very special personal qualities. It is quite easy to assess an individual's professional qualities; it is much more difficult to assess personal qualities. I am sure that any of the consulting engineers in the audience would agree with that statement. I also have discovered that there are some skills that are much more difficult to transfer than others. It is relatively easy to find an engineer capable of transferring skill in building a transmission line; it is much more difficult to find someone capable of transferring skills, know-how, knowledge, and attitudes in all the areas of social and community development — these are rare personal qualities indeed.

The conclusion that this could lead us to, I think, is that we will not shy away from continuing to provide the traditional schools, the traditional technology, the things that we as Canadians know we do well; many of the skills are concentrated in the whole area of infrastructure. Frequently by undertaking these projects, we release resources, both financial and human, in the developing countries that allow the indigenous development and application of technology that is more appropriate for the society than what we had to offer.

What about our future directions? Canada's technical assistance, our aid program, has always been guided by an attempt to match the needs of the developing countries with Canadian capabilities. Applying this principle to the future, I expect we will be increasingly sensitive to the growing differentiation of the Third World countries into groups at different stages of development, specifically the poorest countries, the middle-income countries, and the newly industrialized countries. I expect, or at least hope, that CIDA's technical assistance policies and practices in the 1980s will become more differentiated and, therefore, more flexible in responding to the specific needs of individual countries as well as groups of developing countries. I hope that the relations between CIDA and the ultimate sources of Canadian technical expertise, without which we cannot exist, will be better defined and that we will find ways to make better use of Canadian human resources. We are in the process of rationalizing our links with Canadian universities in a way that we hope will allow them

to plan their development of specialized resources for technical assistance. We are also developing the idea of twinning, whereby a formal and sustained link is created, with CIDA support, between an institution in Canada and an institution with corresponding aims in a developing country or region. To date our twinning experience has largely been limited to university departments, but we would like to extend it to institutions such as trade unions and cooperatives.

Very briefly, here are some of the other mechanisms we are looking at: We are developing a tripartite form of cooperation in the area of technical assistance, where basically we become partners with another country, generally a donor country, but one that has particular skills that we do not have but we think are pertinent to the countries where we are working. This approach takes patience to develop but it is very rewarding in material and in human terms. I hope to see this form of cooperation expanded in the future.

We are also fairly heavily involved in third-country training, and we would like to develop whatever new mechanisms are required to make it easier and to ensure that it occurs more frequently.

I hope to see more collaboration with IDRC; we already have a close and friendly working relationship in the exchange of information, but we are working on ensuring that we become involved in activities that would allow us to apply the technology developed from IDRC-supported research.

We will be looking at a series of mechanisms that would increase our flexibility to respond to different needs. The one that comes immediately to mind is the question of cost-sharing and technical assistance, and cost-recovery and technical assistance for countries that still require technical assistance but whose foreign exchange reserves are such that they would not normally qualify for concessional aid.

I should like to leave one closing thought. I hope that in our discussions of the transfer of technology, at least under the aid umbrella, we are also talking about the transfer of understanding and of attitudes, and here I am referring to a two-way flow. Without such a two-way flow of understanding, much of what we are doing loses its purpose.

William Jenkins is Vice-President, Policy Branch, Canadian International Development Agency (CIDA).